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To cite this article: Leevia Dillon, Brittany E. Hayes, Joshua D. Freilich & Steven M. Chermak (2019): Gender Differences in Worry About a Terrorist Attack: A Cross-National Examination of Individual- and National-Level Factors, *Women & Criminal Justice*, DOI: 10.1080/08974454.2018.1528199

To link to this article: <https://doi.org/10.1080/08974454.2018.1528199>



Published online: 25 Apr 2019.



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Gender Differences in Worry About a Terrorist Attack: A Cross-National Examination of Individual- and National-Level Factors

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Prior research has found gender to be associated with worry about crime and terrorism. We used World Values Survey data to assess gender differences in worry about terrorism across 54 nations. Analyses also examined the influence of individual- and national-level factors. Women were significantly more worried about terrorism in 22 of the 54 nations. Men in Iraq, Libya, Yemen, and New Zealand were significantly more worried about terrorism than women. Individuals were more likely to worry about terrorism as the nation's average mortality count in terrorist incidents increased. Policy implications and directions for future research are discussed.

Keywords terrorism, worry, gender, cross-national

INTRODUCTION

Given the global nature and occurrence of terrorism, there has been a documented increase in the worry about a potential attack among individuals. This phenomenon was made salient after major terrorist acts, including the September 11, 2001 attacks in the United States and

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the July 7, 2005 London bombings (Gaines & Kappeler, 2012; Shigemura et al., 2010). Although terrorism often results in casualties and physical injuries, psychological suffering is more widespread (Butler, Panzer, & Goldfrank, 2003) involving not only terrorist victims but the society at large (Perry & Alvi, 2012). This is likely due to the perceived randomness of these attacks and the attackers' goal of causing widespread fear and insecurity (Howes, 2012; Saka & Cohen-Louck, 2014). Psychological consequences of terrorism can include posttraumatic stress disorder (PTSD) and depression among other consequences (Boscarino, Adams, Figley, Galea, & Foa, 2006; De Clercq, Haq, & Azeem, 2017; Galea et al., 2002; Laufer & Solomon, 2009). In addition, terrorist attacks may increase fear or anxiety over future attacks (Boscarino, Figley, & Adams, 2003). This is in contrast to routine crime where most perpetrators do not intend to cause fear or anxiety, even though this sometimes does result (Brück & Müller, 2010).

Prior research has shown women are more fearful of crime in general than men (Ferguson & Mindel, 2007; Fox, Nobles, & Piquero, 2009; Scarborough, Like-Haislip, Novak, Lucas, & Alarid, 2010) and are more fearful of terrorism, specifically (Hirsch & Lazar, 2012; Laufer & Solomon, 2009; Nellis, 2009). However, terrorist events are not randomly distributed (Parkin & Freilich, 2015). Some nations have a greater incidence of terrorist attacks and casualties. Therefore, national-level factors may have a unique effect on worry about a terrorist attack beyond individual-level correlates. As we elaborate below, we propose that there will be gender differences at the bivariate level in worry about terrorism across nations whereby men in war-torn countries will worry more about terrorist attacks than women.

While country-specific analyses have examined fear of terrorism (Brück & Müller, 2010; Shechory-Bitton & Cohen-Louck, 2018; Shigemura et al., 2010), this is the first cross-national study that examines both individual and national factors that may affect an individual's worry about a terrorist attack. We justify this focus on worry—rather than fear—about a terrorist attack in the following section. For the current study, we relied on data from the World Values Survey (WVS) to first assess gender differences at the bivariate level in worry about a terrorist attack across 54 developing and developed nations. Second, individual- and national-level predictors associated with worry about a terrorist attack were examined with hierarchical generalized linear modeling. As we elaborate below, the social ecological framework was used to highlight the unique role national-level indicators may have on individual levels of worry beyond known correlates of worry about terrorist attacks.

FEAR OF VERSUS WORRY OVER CRIME AND TERRORISM

There has been extensive discussion regarding definitional issues associated with the concept of fear, with specific attention given to fear of crime (Ferraro, 1995; Warr & Ellison, 2000). National surveys in the United States, Europe, Japan, and Australia have found fear of crime to be a global phenomenon (Gailey, Alper, & Chappell, 2011; van Kesteren, Mayhew, & Nieuwebeerta, 2000; Widdop, 2007). However, there are concerns regarding the construct validity of the instruments used to measure this phenomenon. In particular, the phrasing of items measuring this phenomenon in large-scale survey studies has been criticized (Jackson, 2006). For instance, the International Crime Victim Study and the European Social Survey both

asked about respondents' feelings of safety when walking alone in local areas after dark to measure fear instead of directly asking about fear of crime (Gray, Jackson, & Farrall, 2008). This issue becomes compounded when the surveys need to be translated across a number of languages to make cross-national comparisons.

Scholars have also examined methodological and conceptual differences between measures of fear and worry about crime (Williams, McShane, & Akers, 2000). Common measures of fear were converted to worry measures and compared against each other for their conceptual dimensions and reliability. The worry scale generated the most crime-focused measurement and highest reliability. Williams and colleagues (2000) therefore concluded that "worry" had a greater utility for measuring specific concerns about crime than existing approaches that utilize fear of crime.

Warr and Ellison (2000) argued for using the term "worry" instead of "fear" in surveys because questions on this topic could illicit distress in respondents over future victimizations instead of capturing their perceptions of immediate danger. It is therefore likely that worry is a more inclusive concept than fear. Although exploring the differences between the concepts of fear of and worry about terrorism is beyond the scope of this article, we note the methodological issues associated with these concepts.¹ The WVS allows us to explore factors affecting worry about terrorism across multiple countries.

There is a substantial body of research focusing on predictors of fear of crime (e.g., Shechory-Bitton & Soen, 2016; Vilalta, 2011) and an emerging body of research on the predictors of fear of terrorism among citizens (Brück & Müller, 2010; Forst, 2007; May, Herbert, Cline, & Nellis, 2011; Shechory-Bitton & Silawi, 2016), that is relevant to the current study. The fear of crime research offers a unique foundation to examine worry about terrorism. Emerging research has shown similar demographic determinants of fear of crime and fear of terrorism (Brück & Müller, 2010; May et al., 2011; Shechory-Bitton & Cohen-Louck, 2018; Shechory-Bitton & Silawi, 2016). Below we review the social ecological model to identify individual- and national-level factors that may influence an individual's worry about a terrorist attack based on prior research on worry over crime in general and worry over terrorism specifically.

THE SOCIAL ECOLOGICAL FRAMEWORK

The social ecological model proposes that there is a complex interplay between individual-, community-, state-, and national-level factors (Bronfenbrenner, 1979). The causes of behaviors and attitudes are therefore related to the intersections across these systems. Social and cultural institutions are the focus of this framework, which assesses how groups and networks are organized in ways that create contexts that contribute to individual behaviors and actions (Heise, 1998). The microsystem—or the center of the model—consists of individual characteristics, such as gender, educational level, or religious beliefs. The macrosystem focuses on the norms and dynamics of groups and can include nations. More broadly, the macrosystem includes the context in which individuals are embedded that may affect attitudes and worry beyond individual-level predictors. The importance societies have given to crime and terrorism at a national level can be inferred from global anticrime and

antiterrorism dialogs as well as recent national policies that include heavy use of surveillance (Brück & Müller, 2010). Below we first review the specific individual factors that may affect an individual's worry about a terrorist attack. We then discuss the national-level context and associated predictors that may influence an individual's worry about a terrorist attack beyond individual correlates of worry.

Individual-Level Factors

Gender

At the individual level, gender has been shown to be associated with both worry about crime and terrorism (Brück & Müller, 2010). Prior research has shown that gender differences in worry about crime remain stable regardless of the specificity of offenses (Ferguson & Mindel, 2007; Fox et al., 2009; Scarborough et al., 2010). In other words, women are more likely to report higher levels of worry about crime in general than men and to report higher levels of worry than men for most specific offenses. Scholars have reported that women's fear of sexual assault and rape increases their fear of other types of crime (Wilcox, Jordan, & Pritchard, 2006). This is despite the fact that women have lower victimization rates than men (May, Rader, & Goodrum, 2010). Nevertheless, research on fear of terrorism among citizens has demonstrated similar gender differences—women have reported greater fear of terrorism than men (Hirsch & Lazar, 2012; Laufer & Solomon, 2009; Nellis, 2009). Much of this research has involved country-specific analyses, namely in the United States, Europe, and the Middle East (Brück & Müller, 2010; Shechory-Bitton & Cohen-Louck, 2018; Shigemura et al., 2010). Yet prior cross-national comparisons have indicated global attitudes vary by gender (Adamczyk & Pitt, 2009; Nayak, Byrne, Martin, & Abraham, 2003; Yuchtman-Yaar & Alkalay, 2007). Each nation faces unique terrorist threats. Therefore, we propose that there will be gender differences in the worry about terrorism across nations. In war-torn nations where men are at the front lines and are more likely to be killed in such incidents (Pearce, 2006), it is likely men will be more worried about a terrorist attack at the bivariate level. Consistent with the literature on gender differences in worry and fear of crime, in the remaining nations and cross-national analyses we hypothesize that women will be more worried about terrorist attacks than men.

Media Exposure

Extant research has shown media exposure is associated with fear of crime (Callanan & Rosenberger, 2015). Nellis and Savage (2012) found that an American respondent's TV exposure to terrorist attacks was positively associated with fear of terrorism. Similarly, Nellis (2009) found that women were more fearful and were more likely than men to seek out information in response to terrorism-related information. A prospective study conducted on American children between the ages of nine to 14 living in Washington, D.C. found that those who had been exposed to news coverage of the September 11, 2001 (9/11) attacks reported significantly higher levels of fear of terrorism (Lengua, Long, Smith, & Meltzoff,

2005). For these reasons, media exposure will likely impact the respondent's worry about a terrorist attack.

Religious Importance

Prior research has demonstrated that religious importance influences public perceptions of criminality and that the strength of religious beliefs affects punitiveness (Hanslmaier & Baier, 2016; Sales-Wright, Vaughn, & Maynard, 2016). Matthews, Johnson, and Jenks (2011) found that frequency of religious attendance had a significant negative association with fear of property crime. Similarly, religious involvement has also been shown to have a protective effect on individuals who had prior exposure to terrorism. A study on the Palestinian-Israeli conflict conducted by Soroski (1996) found that religious involvement played a positive role in settlers who were living in areas with terrorist attacks. That is, religious settlers exhibited more resilience compared to their nonreligious counterparts. Similarly, Solomon and Berger (2005) found religious involvement to have a protective effect on rescue workers responsible for gathering the dead from locations of terrorist attacks.

The buffering hypothesis proposes an inverse correlation between religiosity and fear of death (Hoeverd & Sibley, 2013). In other words, the greater the importance an individual places on religion, the lower the level of their death anxiety. In their study comparing the determinants of fear of crime and fear of terrorism, Shechory-Bitton and Cohen-Louck (2018) reported that variables used to assess fear of crime were insufficient to examine fear of terrorism. As such, they suggested that other predictors, including religion, be taken into consideration. Guided by this line of thinking, we propose that as individuals' involvement in religion and the importance they place on religion increase, they will report less worry about a terrorist attack because of the buffering role of religion, thereby decreasing their death anxiety.

Justification of Violence

Individuals experience moral conflicts when they realize the significant benefits that arise from engaging in violence and misconduct. Hence, moral disengagement strategies, derived from Sykes and Matza's (1957) neutralization techniques, can be utilized to justify criminal acts. In a longitudinal study focusing on American delinquents, Shulman, Cauffman, Piquero, and Fagan (2011) found that moral disengagement is correlated and predictive of criminality. Similarly, another study in the United Kingdom found that gang members were more likely to engage in violent behavior and justify violence than nongang members (Alleyne, Fernandes & Pritchard, 2014). Relatedly, the cultural spillover theory of violence proposes that support for specific types of violence may generalize to other forms of violence (Baron & Straus, 1989) and may include terrorism, which is an inherently violent act. Although there are no formal theories positing the root causes of individual support for acts of terrorism (Victoroff, 2005), the conservation of resources theory may also explain the link between the justification of violence and terrorism. This theory suggests that when individuals' personal, social, or economic resources are threatened, a defensive response mechanism will be

triggered (Hobfoll, 1989). This theory was supported in a study of Israeli Jews and Muslims that indicated that threats to economic and psychosocial resources due to exposure to terrorism were associated with PTSD symptoms and in turn were related to aggression and support for political violence in a retaliatory fashion as a self-protective measure (Hobfoll, Canetti-Nisim & Johnson, 2006). By extending it further, it is likely that exposure to terrorism results in psychological distress due to the loss of resources and in turn leads to increasing support for political violence as a protective mechanism. The moral conflicts faced by these individuals allow them to utilize moral disengagement and justify the violence inherent in terrorist attacks. Therefore, we propose that as individuals' justification of violence in general increases, they will report less worry about a terrorist attack because of the inherent violent nature of the attack.

National-Level Factors

As noted, extant research has shown global attitudes vary considerably, including attitudes toward violence against women (Hayes & Boyd, 2017), homosexuality (Adamczyk & Pitt, 2009), and immigration (Green, Sarrasin, Fasel, & Staerklé, 2011). As proposed by the social ecological model, this extant research has shown national-level factors independently influence these attitudes beyond individual-level correlates. That is because individuals are socialized within the geopolitical borders of their nation (Hayes & Boyd, 2017). Nations have different sociopolitical and cultural environments, which subsequently may shape individual attitudes—including attitudes about terrorism—across nations. To our knowledge, no study has examined the impact of national-level predictors on worry about terrorism.

Gender Socialization

Due to gender socialization and cultural variations in the development of gender roles across nations, it is likely there are differences in the public visibility among men and women across nations. As compared to men who are expected to be employed outside of the home, there may be an expectation for women to take on routine household and childrearing activities (Hindelang, Gottfredson, & Garofalo, 1978). As such, it is likely that in certain nations, women's movement outside the home is restricted compared to men. In fact, Adamczyk and Hayes (2012) found that 45% of 31 developing nations included in analyses had restrictions on women's movement. In addition, some nations have ongoing conflict where men are serving on the front lines and therefore have a greater risk of dying in a terrorist attack. If there are restrictions on women's movement or men are serving on the front lines, men's attitudes about particular events, including terrorism, may have a greater influence than women's attitudes. Considering the differences in sociopolitical and cultural environments of nations, we hypothesize at the bivariate level that men are more likely than women to report worry about a terrorist attack in nations where there is ongoing conflict.

Terror Management Theory and Prior Exposure to Terrorism

Terror management theory (Greenberg, Pyszczynski, & Solomon, 1986) has proposed an innate mental conflict resulting from the need for self-preservation while recognizing that death is unavoidable and unpredictable to a certain degree. As a result of this conflict, individuals experience terror (i.e., death anxiety), which will prompt them to embrace cultural or symbolic values to provide their life with significance. A study by Pyszczynski and colleagues (2006) found that Iranian students were more likely to support martyrdom attacks against the United States when they were reminded of their own mortality. A key tenet of terror management theory is the mortality salience hypothesis, which suggests that an individual's response to terrorism is the salient fear of death. This salient fear of death is driven by exposure to such threats, resulting in conscious thoughts of dying (Pyszczynski, Solomon, & Greenberg, 2002).

At the individual level, prior exposure to terrorist attacks has been shown to predict worry about terrorism. In other words, higher levels of fear were reported among individuals who had prior exposure to terrorist attacks (Shechory-Bitton & Cohen-Louck, 2017, 2018). This increased fear of terrorism among those who have been exposed to attacks may be related to the mortality salience hypothesis and includes the individual's worry about the likelihood of dying from these attacks or the saliency of death brought about by these attacks (Boscarino et al., 2006; Shechory-Bitton & Cohen-Louck, 2017). To capture the saliency of death at the national level, the average number of casualties and the average number wounded in terrorist attacks within a nation may communicate to citizens the threat of death associated with terrorism. Based on the tenets of terror management theory generally and the mortality salience hypothesis specifically, we hypothesize that individuals who reside in nations with higher wounded and mortality counts associated with terrorist incidents will report greater worry about a terrorist attack.

Targets/Victims of Terrorist Attacks

While terrorist attacks are thought to be random and indiscriminate acts of violence involving victims from all demographics, the last decade saw a 64% increase of attacks occurring in densely inhabited areas (Canetti-Nisim, Mesch, & Pedahzur, 2006). According to Molotch and McClain (2003), terrorists have been more likely to target urban areas, rather than more prominent targets like the military, because urban centers have a higher concentration of people. Given the changes in target and victim characteristics of terrorist attacks over the last decade, it is possible attacks in public places increase the saliency of death associated with terrorism. It remains unknown if the target of the attack has an effect on individuals' worry about a terrorist attack. In other words, nations where the primary target of attacks are private citizens may have an effect on an individual's worry about terrorism.

Moral Panics and Worry over Terrorism at the National Level

The post-9/11 era saw a documented increase in worry about terrorism (Gaines & Kappeler, 2012; Shigemura et al., 2010). Both politics and media coverage are often cited as

factors that contribute to moral panics in nations, which are exaggerations or misrepresentations of perceived deviance or criminality (Rothe & Muzzatti, 2004). For instance, the American public has been besieged with media coverage and political speeches involving perceived threats and security warnings about terrorism, which can create a moral panic. In the context of terrorism, such events have been documented to generate negative emotions in the audience (Perry & Alvi, 2012; Shigemura et al., 2010). Such media coverage can promote citizens' worry about deviance and inspire public outcries for sanctions that may or may not be justified (Altheide, 2006; Cohen, 2004). This inflation of worry creates an environment for an overreaction toward terrorism and this "window of opportunity" is exploited by politicians to further their agendas in legitimizing certain policies by reinforcing the excessive worry among the citizens (Friedman, 2011). To capture the essence of the public's inflated worry about terrorism, the individual-level measure of worry about terrorism was aggregated to the national level to capture the nation's overall level of worry about a terrorist attack. However, it is likely that the attitudes concerning worry about terrorism for men and women do not have the same effect across nations. As discussed above, there may be restrictions on women's movement at the national level related to gender socialization. We therefore disaggregated average male and female worry about terrorism at the national level. We hypothesize at the national level that men's average worry about terrorism will have a greater effect on individual-level worry than women's average worry about terrorism.

PRESENT STUDY

The current study contributes to the literature on gender and terrorism by examining cross-national gender differences in worry about a terrorist attack. Guided by prior research, the current study addressed the following research questions: (a) What are the cross-national gender differences in worry about a terrorist attack at the bivariate level? (b) Which individual-level factors predict worry about terrorism across nations, and (c) Which national-level factors influence worry about terrorism across nations? Based on the literature review, our hypotheses for multivariate analyses were formulated as follows:

Individual-Level Hypotheses

H1: Women are more likely than men to report worry about a terrorist attack.

H2: Individuals who watch TV daily are more likely than individuals who do not watch TV daily to report greater worry about a terrorist attack.

H3: As the importance individuals place on religion increases, they will report less worry about a terrorist attack.

H4: As individuals' attendance at religious services increases, they will report less worry about a terrorist attack.

H5: As individuals' justification of violence increases, they will report less worry about a terrorist attack.

National-Level Hypotheses

H6: Individuals who reside in nations with higher average mortality counts in terrorist attacks will report more worry about a terrorist attack.

H7: Individuals who reside in nations with higher average wounded counts in terrorist attacks will report more worry about a terrorist attack.

H8: Individuals who reside in nations in which private citizens are the most common target/victim of terrorist attacks will report more worry about a terrorist attack.

H9: As the national male averages for worry about terrorist attacks increases, individuals will report more worry about a terrorist attack.

H10: As the national female averages for worry about terrorist attacks increases, individuals will report more worry about a terrorist attack.

DATA

We analyzed data from the sixth wave of the WVS to examine the effect of individual- and national-level factors on an individual's worry about a terrorist attack. The sixth wave of the WVS was collected from 2010 to 2014 (Inglehart et al., 2014). The WVS was designed in such a way to allow for cross-national comparisons of values and attitudes on a multitude of topics while facilitating comparisons over time (Inglehart & Baker, 2000). Indeed, scholars have previously used the WVS to examine individual- and national-level influences on attitudes toward homosexuality (Adamczyk & Pitt, 2009), child maltreatment (Hayes & O'Neal, 2018), and social and political liberal values (Yuchtman-Yaar & Alkalay, 2007).

In total, the sixth wave of the WVS contained 90,350 respondents from 60 nations. After list-wise deletion of respondents and countries that did not have data on measures necessary for the analyses, analyses were limited to 64,187 respondents residing in 54 nations. National data was compiled from the Global Terrorism Database (GTD; National Consortium for the Study of Terrorism and Responses to Terrorism [START], 2016), the Association of Religion Data Archives (Association of Religion Data Archives [ARDA], 2011) and was aggregated from WVS data. Prior research that has examined ecological and individual hypotheses in multilevel studies has recommended aggregating individual-level measures to capture macro-level characteristics (Blakely & Woodward, 2000) and has previously been done with WVS data (Adamczyk & Pitt, 2009; Hayes & O'Neal, 2018).

Dependent Variable

Analyses examined the respondent's worry about a terrorist attack. Respondents were asked "To what degree do you worry about the following situations?" and were provided with a list of six different scenarios. One scenario was "a terrorist attack." Responses included if the respondent worried very much, a great deal, not much, and not at all. The item was initially

reversed coded so that higher scores were indicative of greater worry. The recoded four-category measure was then collapsed into a binary outcome for multivariate analyses where “1” = Worries very much or a great deal and “0” = Worries not much or not at all.

Individual-Level Independent Variables

Analyses included a series of individual-level factors that have previously been shown to be associated with both worry about crime and terrorism (Brück & Müller, 2010; Nellis & Savage, 2012; Shechory-Bitton & Cohen-Louck, 2017). *Gender* was a dichotomous predictor where “1” = Female and “0” = Male. The respondent’s *attendance of religious services* was a continuous predictor ranging from “1” = Never to “6” = Once a week ($Mean = 3.48$, $SD = 1.92$). The *importance the respondent placed on religion* was a continuous measure where “1” = Religion was not important at all to “4” = Religion was very important ($Mean = 3.00$, $SD = 1.07$). Respondents were asked if they believed *violence against other people was justified*. Responses were provided on a 10-point Likert scale where “1” = Never justified and “10” = Always justified ($Mean = 1.95$, $SD = 1.88$). Finally, the respondent’s media exposure was created from a binary measure that captured if the respondent watched *TV news daily* where “1” = Respondent watched TV news daily. Descriptive statistics for the individual- and national-level measures can be found in Table 1.

Individual-Level Control Variables

A series of control variables previously shown to be associated with fear of crime and/or terrorism were also included (Brück & Müller, 2010; Shechory-Bitton & Cohen-Louck, 2017; Shechory-Bitton & Silawi, 2016). *Financial satisfaction* ranged from “1” = Completely dissatisfied to “10” = Completely satisfied ($Mean = 5.93$, $SD = 2.45$). The respondent’s *age* was a continuous measure that ranged from “16” to “97” ($Mean = 42.28$, $SD = 16.48$). The respondent’s level of education ranged from “1” = No formal education to “9” = University-level education ($Mean = 5.79$, $SD = 2.36$). If the respondent had been a *victim of a crime* was a binary predictor where “1” = Respondent had been a victim during the past year. The *number of children* the respondent had ranged from “0” to “8 or more children” ($Mean = 1.78$, $SD = 1.68$). *Marital status* was a dummy measure where “1” = Respondent was married and “0” = Respondent was not married.

National-Level Independent Variables

National-level measures were collected from the GTD (START, 2016) and the Association of Religion Data Archives (ARDA, 2011). In addition, national-level measures were aggregated from WVS data. The GTD compiles information on worldwide terrorist events that have occurred between 1970 and 2016 and includes more than 170,000 cases. To begin, the *average mortality count* ($Mean = 1.74$, $SD = 3.05$) and the *average number of individuals wounded* ($Mean = 2.87$, $SD = 3.75$) during terrorist incidents for each nation were included. The GTD also captures the primary target/victim of each incident. For each nation, we

TABLE 1.
Descriptive Statistics (Individual Level $N = 64,187$; National Level $N = 54$).

	Mean/percent	Standard deviation	Minimum	Maximum
Dependent variable				
Worry about Terrorist Attack	63.00%		0.00	1.00
Individual level				
Female	53.00%		0.00	1.00
Religious service attendance	3.48	1.92	1.00	6.00
Importance of religion	3.00	1.07	1.00	4.00
Financial satisfaction	5.93	2.45	1.00	10.00
Number of children	1.78	1.68	0.00	8.00
Age	42.28	16.48	16.00	97.00
Married	56.00%		0.00	1.00
Education	5.79	2.36	1.00	8.00
Violence is justified	1.95	1.88	1.00	10.00
Victimized in past year	8.00%		0.00	1.00
TV daily	76.00%		0.00	1.00
National level				
Average mortality count in incidents	1.74	3.05	0.00	21.00
Average wounded in incidents	2.87	3.75	0.00	19.00
Logged population	7.34	0.72	5.91	9.12
Nation female average for worry of terrorism	2.92	0.52	1.83	3.92
Nation male average for worry of terrorism	2.88	0.53	1.79	3.90
Most common attacks against private citizens (vs. all other primary targets)	30.00%		0.00	1.00

identified the most common *target/victim of terrorist incidents*. This was a binary measure where “1” = Private citizens were the primary targets/victims of terrorist incidents in that nation and “0” = Businesses, the government, police, the military, or unknown target/victim were the primary targets/victims of terrorist incidents in that nation. Average national-level male and female worry about a terrorist attack were aggregated from the individual-level scores for each nation. We utilized the original four-point Likert scale from the respondent’s response to “To what degree do you worry about the following situations? A terrorist attack.” The *national female average for worry about terrorism* was higher ($Mean = 2.92$, $SD = 0.52$) than the *national male average for worry about terrorism* ($Mean = 2.88$, $SD = 0.53$). Finally, the population of the nation was taken from ARDA (2011) and was logged for ease of interpretation. This measure served as a national-level control variable.

STATISTICAL METHOD

To begin, we examined bivariate gender differences in worry about a terrorist attack by nation. Because respondents were clustered geographically (i.e., by nation), the ordinary least

squares regression assumption that observations are independent was violated. Multilevel models, with hierarchical linear modeling software (Raudenbush, Bryk, & Congdon, 2005), contains an additional error term to properly model clustered hierarchical data. Multilevel analyses therefore parse out the effects of national-level measures from individual-level measures. Because our dependent variable was binary, analyses relied on Hierarchical Generalized Linear Modeling (HGLM) for binary outcome measures. HGLM also accounted for clustering at the individual level, included error terms to estimate national predictors, and used a log link function to model the dichotomous dependent variable (Raudenbush et al., 2005). Stepwise regression was used to assess the impact of gender socialization and the mortality salience tenet of terror management theory. Model 1 included all individual- and national-level predictors with the exclusion of if attacks primarily targeted private citizens. Model 2 included all individual- and national-level measures.

Data were systematically missing on key predictors. In other words, some nations were systematically missing data on measures included in the analyses. Therefore, data were deleted listwise, resulting in a final sample of 64,187 respondents residing in 54 nations.

RESULTS

Table 2 presents the results from the nation-specific bivariate analyses. In 22 of the 54 nations, women were significantly more likely to worry about a terrorist attack than men, lending partial support to H1. In four of the 54 nations, men were significantly more likely to worry about a terrorist attack than women. These nations were Iraq (Male Average = 3.29; Female Average = 3.19; $p \leq .05$), Libya (Male Average = 3.47; Female Average = 3.38; $p \leq .05$), Yemen (Male Average = 3.68; Female Average = 3.46; $p \leq .001$), and New Zealand (Male Average = 2.07; Female Average = 1.95; $p \leq 0.05$). In the remaining 28 nations, there were no significant differences between men and women in worry about a terrorist attack.

Table 3 presents the results from the multivariate multilevel analyses. Female respondents and respondents who watched TV daily as their source of information were more likely to worry about a terrorist attack than male respondents and respondents who did not watch TV daily. These findings support H1 and H2. As the importance the respondent placed on religion increased, the more likely the respondent was to worry about a terrorist attack, running counter to H3. H4 was not supported as the respondent's attendance at religious services was not significantly associated with the outcome measure. Supporting H5, as the respondent's justification of violence increased, the respondent was less likely to worry about a terrorist attack. Respondents who were victimized in the past year were more likely to worry about a terrorist attack than those who were not victimized in the past year. As the respondent's financial satisfaction increased, the respondent was less likely to worry about a terrorist attack. The more children the respondent had, the more likely the respondent was to worry about a terrorist attack. Respondent's age, level of education, and marital status were not significantly associated with if the respondent worried about a terrorist attack. These individual-level findings remained consistent across the two models.

TABLE 2.
Mean Differences in Worry About Terrorist Attack Between Males and Females by Nation.

Nation	Male average	Female average	Nation average	Nation	Male average	Female average	Nation average
Algeria	3.30	3.29	3.29	Mexico	3.47	3.66***	3.57
Argentina	1.95	1.98	1.97	Netherlands	1.76	1.83*	1.79
Armenia	3.41	3.51	3.48	New Zealand	2.07	1.93*	1.99
Australia	2.24	2.34*	2.30	Nigeria	3.29	3.23	3.26
Azerbaijan	3.24	3.38*	3.31	Pakistan	3.08	3.04	3.06
Bahrain	2.18	2.22	2.19	Peru	3.33	3.33	3.33
Belarus	2.81	2.91	2.86	Philippines	3.34	3.47**	3.41
Brazil	2.76	3.00***	2.91	Poland	2.37	2.60***	2.50
Chile	2.20	2.35	2.28	Romania	2.58	2.92***	2.77
China	2.48	2.50	2.49	Russia	3.01	3.19***	3.11
Colombia	3.45	3.64***	3.54	Rwanda	3.87	3.90	3.89
Cyprus	2.32	2.68***	2.51	Singapore	2.41	2.42	2.42
Ecuador	3.20	3.18	3.19	Slovenia	1.97	2.29***	2.15
Egypt	3.16	3.15	3.15	South Africa	2.48	2.48	2.48
Estonia	2.44	2.58**	2.52	South Korea	2.65	2.75	2.70
Georgia	3.66	3.62	3.64	Sweden	1.82	2.03***	1.93
Germany	2.26	2.35*	2.30	Taiwan	2.66	2.99***	2.83
Ghana	3.41	3.37	3.39	Thailand	2.62	2.63	2.61
India	2.90	2.85	2.88	Trinidad and Tobago	2.34	2.41	2.38
Iraq	3.29	3.19*	3.24	Tunisia	3.88	3.92*	3.90
Japan	3.27	3.49***	3.38	Turkey	2.99	3.00	2.99
Jordan	2.41	2.77***	2.59	Ukraine	2.80	2.83	2.82
Kazakhstan	3.08	3.25***	3.18	United States	2.59	2.67*	2.63
Kyrgyzstan	3.19	3.24	3.22	Uruguay	2.26	2.52**	2.40
Lebanon	3.04	3.08	3.06	Uzbekistan	2.35	2.38	2.37
Libya	3.47	3.38*	3.43	Yemen	3.68	3.46***	3.57
Malaysia	3.62	3.69	3.65	Zimbabwe	2.87	2.91	2.89

* $p < .05$; ** $p < .01$; *** $p < .001$.

Concerning national-level predictors, Model 1 did not include the measure capturing if the majority of attacks were against private citizens. To begin, as the average mortality count during terrorist incidents increased within a nation, the more likely a respondent was to worry about a terrorist attack. This finding supports H6. H7 was not supported. The average wounded during terrorist attacks within a nation was not significantly associated with a respondent's worry about a terrorist attack. As indicated in Model 1 of Table 3, when the measure of if the majority of attacks were against private citizens was not included in analyses, both the national-level female and male average worry about terrorist attacks were significant. As both national-level female and national-level male worry about a terrorist attack increased, respondents were more likely to worry about a terrorist attack, supporting H9 and H10. Model 2 in Table 3 included the measure of if the majority of attacks were against private citizens, which was not significantly associated with respondents' worry about a terrorist attack. This finding does not support H8. When the measure of if the majority of attacks were against private citizens was included in the model, national-level female worry about a

TABLE 3.

Results for if the Respondent was Worried About a Terrorist Attack (Unit-Specific Model With Robust Standard Errors Reported; Individual Level $N = 64,187$; National Level $N = 54$).

	Model 1 Odds ratio	Model 2 Odds ratio
Individual level		
Intercept	1.06	1.06
Female	1.16***	1.16***
Religious service attendance	1.00	1.00
Importance of religion	1.18***	1.18***
Financial satisfaction	0.98***	0.98***
Number of children	1.02*	1.02*
Age	1.00	1.00
Married	1.03	1.03
Education	0.99	0.99
Violence is justified	0.97*	0.97*
Victimized in past year	1.17**	1.17**
TV Daily	1.50***	1.50***
National level		
Average mortality count in incidents	1.05***	1.05***
Average wounded in incidents	1.01	1.01
Logged population	0.97	0.97
National female average for worry of terrorism	2.58*	1.93
National male average for worry of terrorism	2.64*	3.52*
Most common attacks against private citizens (vs. all other groups)		0.91

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

terrorist attack was no longer significant. National-level male worry about a terrorist attack remained significant when the majority of attacks were against private citizens' variable was included in the model.

DISCUSSION

Individual-Level Predictors

Gender differences emerged when worry about terrorist attacks was examined across nations at the bivariate level. Interestingly, men reported greater worry than women in four nations—Iraq, Libya, Yemen, and New Zealand. What is unique is that three of these four countries are active war zones with a plethora of warring parties. It is likely that men are at the front lines and thus at a greater risk of being killed during a terrorist incident in these nations. In addition, women in these countries may experience restrictions on their day-to-day movement. The results for New Zealand were unexpected because, unlike the other three nations, it is at peace and is considered by many to be a developed nation. According to the 2017 annual report from the New Zealand Security Intelligence Service, the threat of terrorism to the country was low and was evaluated to be “possible but not expected” (New Zealand Security Intelligence Service, 2017, p. 14). Nevertheless, an online poll conducted

by HorizonPoll (2016) found that 14% of New Zealanders were “very concerned” about them or their family members being victims of terrorism. One possible explanation of this finding is the geographical proximity it shares with Australia—it could be that the influence of terrorism in Australia and the negative aftermath of these attacks has spread to the citizens of New Zealand. Nevertheless, women were more likely to report greater worry about terrorism in 22 of the 54 nations and multivariate analyses revealed that females overall were more likely to worry about a terrorist attack than men. This finding is consistent with prior research on worry about both crime and terrorism (Brück & Müller, 2010; Shechory-Bitton & Silawi, 2016)—women worry more about terrorism. Future research should unpack this finding, including the unexpected results found within New Zealand, through ethnographic and interview methods to allow for richer, more contextualized findings.

Watching TV daily was a significant individual-level predictor of worry about terrorism cross-nationally. People who watch TV daily may be more likely to encounter coverage about political conflict or violence, thus increasing their worry. This finding may be explained using the cultivation hypothesis, which suggests that the degree of media consumption of violent and extreme events may result in a distorted worldview of reality (Gerbner, 1969), including a disproportionate fear of terrorism (Nellis & Savage, 2012). Another possible explanation is the substitution thesis, which proposes that viewers who have no prior victimization experience will turn to media representations as substitutes to establish their opinions (Gerbner, Gross, Morgan, & Signiorelli, 1980). Future research should further unpack the process by which media exposure induces worry about potential terrorist attacks.

Of note, we found the relationship between the importance of religion and worry about terrorism was significant but not in the expected direction. Respondents who found religion important were more likely to worry about a terrorist attack. This finding runs counter to the buffering hypothesis. One explanation for this finding may be the saliency of death prompted by a terrorist attack. In fact, a cross-national study conducted by Ellis, Wahab, and Ratnasingam (2013) of Malaysian, Turkish, and American respondents found substantial positive correlations between most religiosity measures (e.g., religious importance) and fear of death. To explain these positive relationships, the authors proposed death apprehension theory. Death apprehension theory suggests that death anxiety is unavoidable because death is accompanied by pain and results in the cessation of life’s pleasures. Death apprehension theory assumes that religion is the main source of belief in an afterlife. The belief in an afterlife contributes to death anxiety because of the uncertainty of the outcome for eternal salvation, which is influenced by factors emphasizing religious importance. Because terrorist attacks prompt the possibility of death anxiety, future research should examine the influence of different religious faiths on worry about potential terrorist attacks.

Further, we found that as individuals justify the use of violence, they were less likely to worry about a terrorist attack. It is possible these individuals see violence as an appropriate response to certain situations. The conservation of resources theory suggests that when individuals’ personal, social, or economic resources are threatened, a defensive response mechanism (e.g., support for violence) will be triggered (Hobfoll, 1989). This may occur in times of war. What is unique about the WVS is that it includes developing and developed nations and nations where there is ongoing conflict. Justification of violence may be especially relevant

in areas with a history of or ongoing conflicts such as in Iraq, Libya, and Yemen. Future research should examine the overlap between worry about terrorism and justification of violence across developing and developed countries engaged in conflicts. It may be worthwhile to also conduct country-specific analyses to unpack the processes behind this measure.

National-Level Predictors

As noted above, the social ecological framework is used to highlight the independent influence of national-level indicators beyond the individual-level predictors on individuals' attitudes and beliefs. Findings indicated that the average mortality count in terrorist incidents, but not the nation's average wounded in terrorist incidents, was significantly associated with worry about terrorist attacks. One explanation may be that the media is more likely to report incidents resulting in greater casualties that remain in the public's attention. Chermak and Gruenewald (2006) found that incident severity (i.e., mortality count) was a statistically significant predictor of media coverage. Another possible explanation is the mortality salience hypothesis of terror management theory (Greenberg et al., 1986). A terrorist attack with a high mortality count may trigger saliency of death in individuals. Such exposure to these threats may then result in the emergence of conscious thoughts of dying that in turn contribute to worry about terrorism.

Of interest, when the attacks against private citizens variable was included in the multivariate models, the nation's female average worry about terrorism was no longer significant while the nation's male average worry about terrorism remained significant. In other words, men's worry about terrorist attacks at the national level had a greater influence than women's worry of terrorist attacks at the national level on individual-level attitudes. Gender socialization may shed light on this finding. In some countries, females are less likely to be involved in public spheres (e.g., working) and may be restricted from movement outside the home. This is in contrast to men who are heavily involved in public spheres (e.g., working, at the front lines of conflicts). In fact, men of military age are more likely to be killed in war regardless of them being combatants or civilians (Pearce, 2006). Therefore, the perceptions of men who are able to move in the public sphere may have greater influence on attitudes than women whose movements may be restricted to the home.

Limitations

Nevertheless, there are limitations that merit mention. First, there are cross-national differences in the motivations of terrorist events. These include, but are not limited to, religiously motivated terrorism, nationalist terrorism, far-right terrorism, or left-wing terrorism. It may be that the motivation of terrorist events has an effect on worry about terrorist attacks. Second, the study utilized daily TV exposure, which may be limited in terms of overall media exposure. Technological advancements have made it possible for individuals to access the news and other information on the Internet. Future research should incorporate respondent's use of these various types of media exposure. Third, other factors have been shown to influence worry about terrorism. These factors include, but are not limited to, being of

foreign origin (Brück & Müller, 2010), race/ethnicity (Shechory-Bitton & Silawi, 2016), neighborhood disorder (Shechory-Bitton & Cohen-Louck, 2017; Shechory-Bitton & Silawi, 2016), and perceptions of risk of terrorism (May et al., 2011; Nellis, 2009). Relatedly, the hypotheses and measures included in the analyses were constrained by the available data. Therefore, the list of excluded predictors (e.g., race/ethnicity) is not exhaustive. The WVS is administered globally, making the determination of the respondent's race or ethnicity complex. Future data collection efforts should include these predictors in a way that can be standardized across many nations.

CONCLUSION

The current study offers insights into cross-national predictors of worry about terrorist attacks. Particular attention was paid to gender differences in worry about terrorist attacks as well as individual- and national-level predictors of worry about terrorist attacks. In 22 of the 54 nations, women were more likely than men to report greater worry about terrorism. Men reported greater worry in four nations whereas there were no significant gender differences in the remaining 28 nations. These findings suggest the national context may have an effect on individual attitudes and beliefs at the bivariate level.

Based on the results from multivariate hierarchical analyses, worry about terrorism is influenced by both individual- and national-level predictors. Overall, being female, religious importance, justification of violence, and watching TV daily were robust individual-level predictors. A nation's average mortality count was significantly associated with worry about potential terrorist events and may highlight the saliency of death to individuals in the nation. In addition, when the primary target of attacks at the national level was accounted for, average male worry about terrorism at the national level—but not average female worry about terrorism—influenced individual level of worry. This is likely related to restrictions in female movement in nations and gender socialization more generally. Together, these findings suggest individual worry about terrorist attacks is influenced by both individual-level and national-level indicators and that the national context can have an effect on individual worry.

NOTE

1. The World Values Survey also utilized the phrase “worry.” Therefore, we elected to also use the term “worry” for consistency unless a specific study mentioned otherwise.

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